Sub A1

What Is Claimed Is:

1. Apparatus suitable for manipulating cerebral blood flow characteristics, the apparatus comprising:

a catheter having proximal and distal ends, a lumen extending therebetween, and an occlusive element affixed to the distal end, the occlusive element having an opening that communicates with the lumen, the occlusive element having a contracted position suitable for transluminal insertion and an expanded position wherein the occlusive element occludes antegrade flow in a vessel; and

at least one flow control device having proximal and distal ends and a flow control element disposed at the distal end, the flow control device, when deployed, controlling flow in the mid-cerebral artery.

2. The apparatus of claim 1 wherein the occlusive element comprises an inflatable balloon.

3. The apparatus of claim 2 wherein the inflatable balloon further comprises a distal taper.

4. The apparatus of claim 3 wherein the inflatable balloon further comprises a proximal taper.

5. The apparatus of claim 1 wherein the flow control element is inflatable.

6. The apparatus of claim 1 wherein the flow control element comprises a plurality of deployable wires coated with a blood impermeable layer.

7. The apparatus of claim 1 wherein the occlusive element affixed to the catheter is configured to occlude antegrade flow in an artery.

8. The apparatus of claim 1 further comprising:
a shaft having proximal and distal ends; and a
balloon having proximal and distal ends,
the balloon being disposed near the distal end of the shaft.

9. The apparatus of claim 8 wherein the balloon is adapted to be disposed in a communicating artery.

10. The apparatus of claim 8 wherein the distal end of the balloon is everted.

11. The apparatus of claim 10 wherein the proximal end of the balloon is everted.

12. The apparatus of claim 1 further comprising a recovery catheter having proximal and distal ends, the recovery catheter configured to telescope in and out of the first catheter.

13. The apparatus of claim 12 wherein the recovery catheter comprises a balloon affixed to the distal end.

14. The apparatus of claim 12 further comprising at least one venting hole disposed in a lateral surface of the recovery catheter.

15. The apparatus of claim 14 further comprising an inner sheath configured to manipulate flow into the

venting hole.

16. The apparatus of claim 12 wherein the recovery catheter comprises a radially expandable distal section.

17. The apparatus of claim 16 wherein the radially expandable distal section comprises a wire weave configuration covered by an impermeable membrane.

18. A method for manipulating cerebral blood flow characteristics, the method comprising:

providing apparatus comprising a catheter having proximal and distal ends, a lumen extending therebetween, and an occlusive element affixed to the distal end, and further providing at least one flow control device having proximal and distal ends, and a flow control element disposed at the distal end;

positioning the distal end of the flow control device in a selected vessel in a contracted state;

positioning the distal end of the catheter in a selected vessel in a contracted state;

deploying the occlusive element affixed to the catheter to occlude antegrade flow in the selected vessel; and

deploying the flow control element to control perfusion in the mid-cerebral artery.

19. The method of claim 18 wherein deploying the flow control element occludes antegrade flow in at least a vertebral artery.

20. The method of claim 18 wherein deploying the flow control element occludes antegrade flow in at least

an internal carotid artery.

21. The method of claim 18 wherein deploying the occlusive element of the catheter occludes antegrade flow in at least a common carotid artery.

22. The method of claim 18 further comprising deploying a balloon configured to occlude flow in an external carotid artery.

23. The method of claim 18 further comprising providing retrograde flow through the lumen of the catheter.

24. The method of claim 18 further comprising sliding a recovery catheter having proximal and distal ends in a telescoping motion in and out of the first catheter.

25. The method of claim 24 further comprising deploying an occlusive element affixed to the distal end of the recovery catheter.

Add A17